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(54) Title: PROGRAMMABLE SELF-ALIGNING LIQUID MAGNETIC NANOPARTICLE MASKS AND METHODS FOR THEIR USE

(57) Abstract: Magnetic nanoparticle masks for lithographic applications of a substrate and methods for producing such masks via defining regions of localized magnetic field maxima and minima on a substrate are provided. Also provided are methods for producing multi-component patterns on a substrate with the magnetic nanoparticle masks.